

FIG. 1(a)

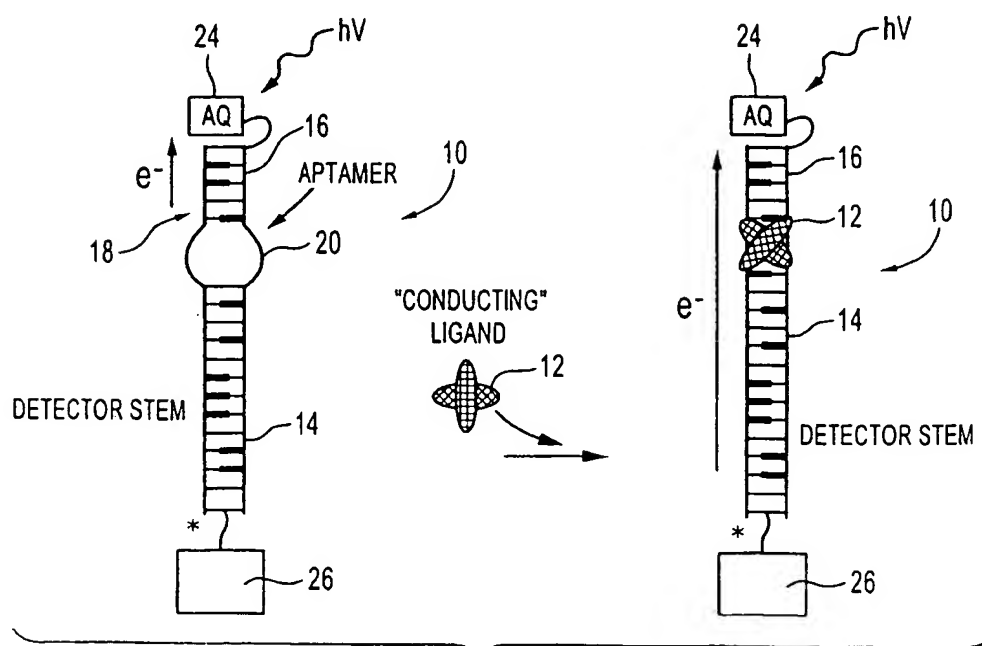


FIG. 1(b)

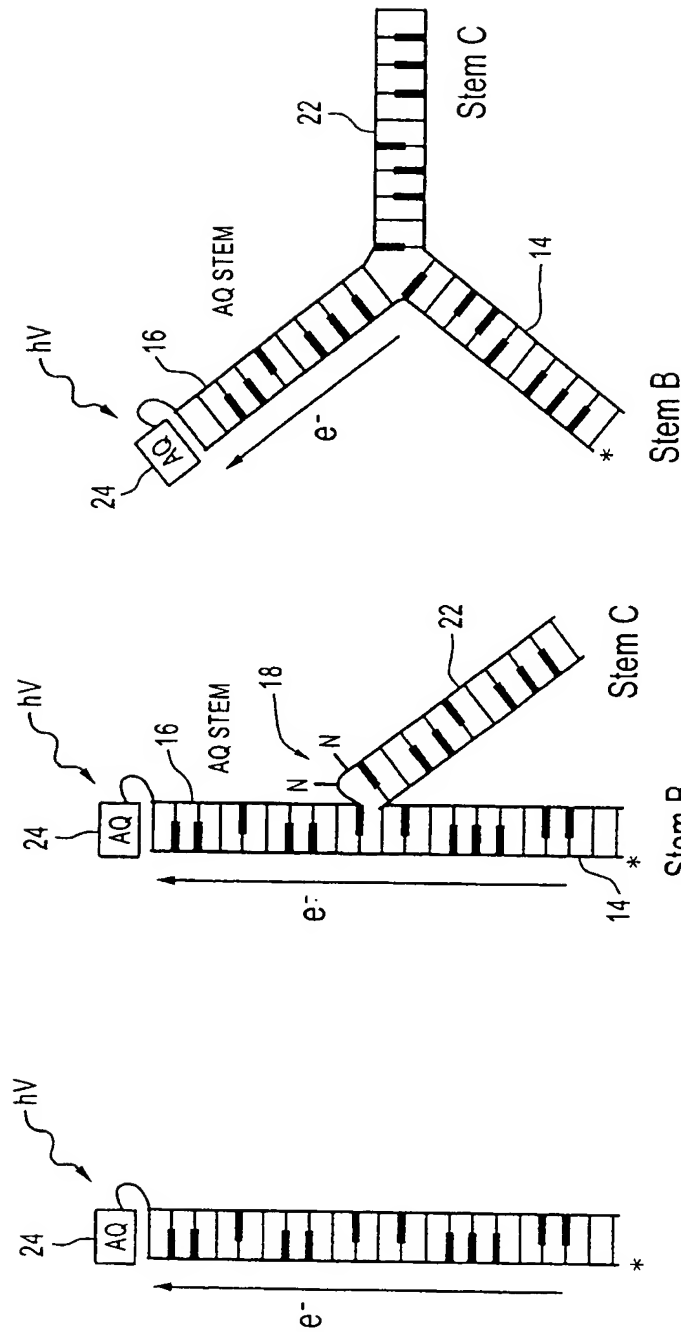


FIG. 2(a)

FIG. 2(b)

FIG. 2(c)

Guanine bases are shown as dark stubs.

* designates a 5'-end labeled strand, which can be analyzed in a sequencing gel for damage to specific guanines concomitant with electron donation.

In panel (II) electrons flow from Stem B to the AQ stem; whereas, in panel (III) electron flow is restricted to the AQ stem.

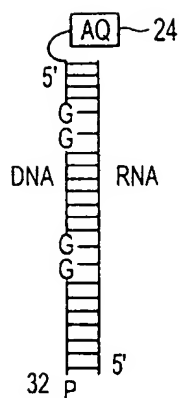


FIG. 3(a)

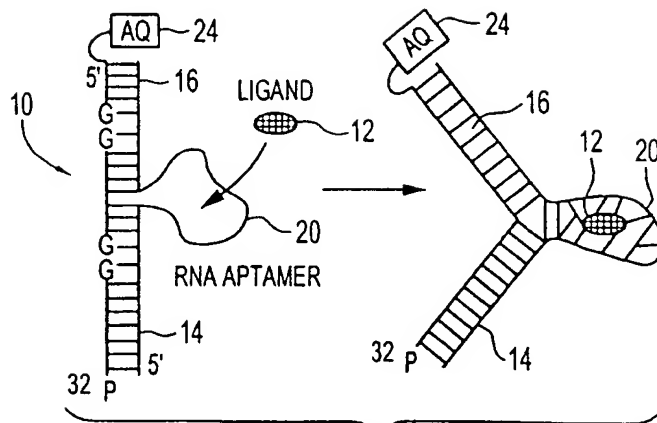


FIG. 3(b)

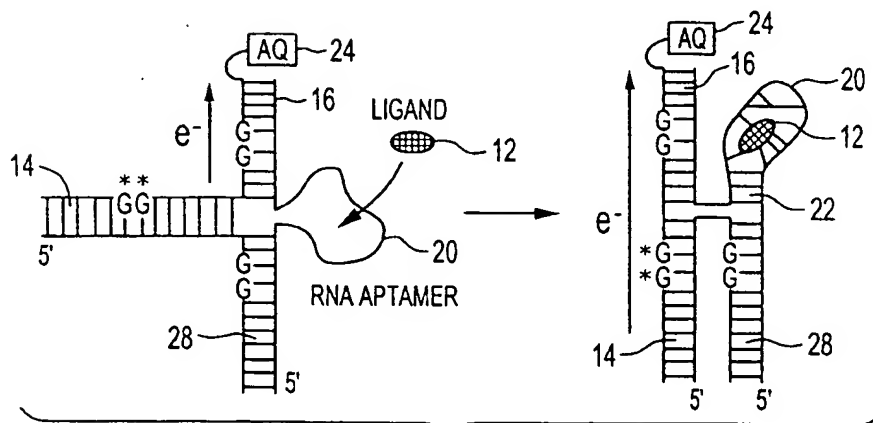


FIG. 3(c)

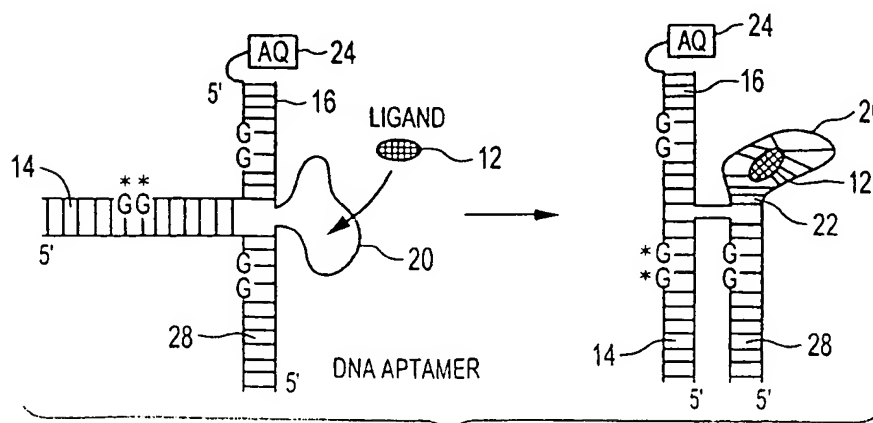


FIG. 3(d)

In (c) and (d), asterisks indicate guanines through which electron conduction may be expected to change subject to ligand binding to the ligand receptor/aptamer.

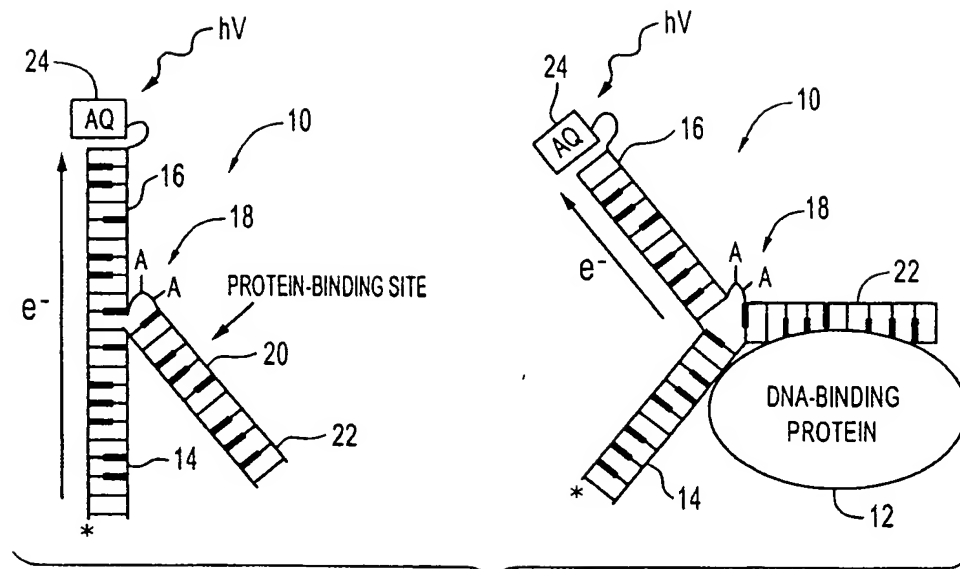


FIG. 4(a)

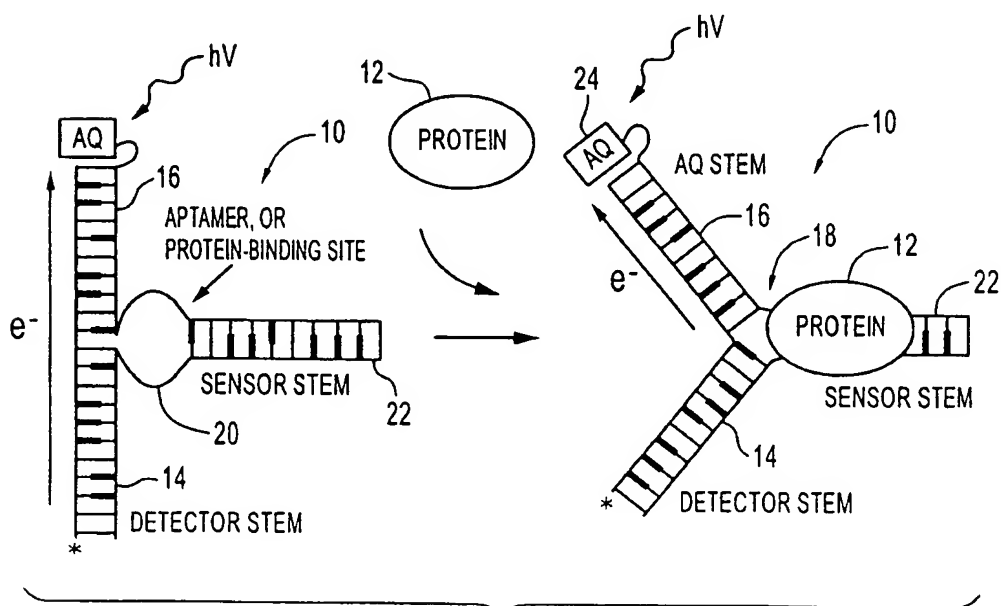


FIG. 4(b)

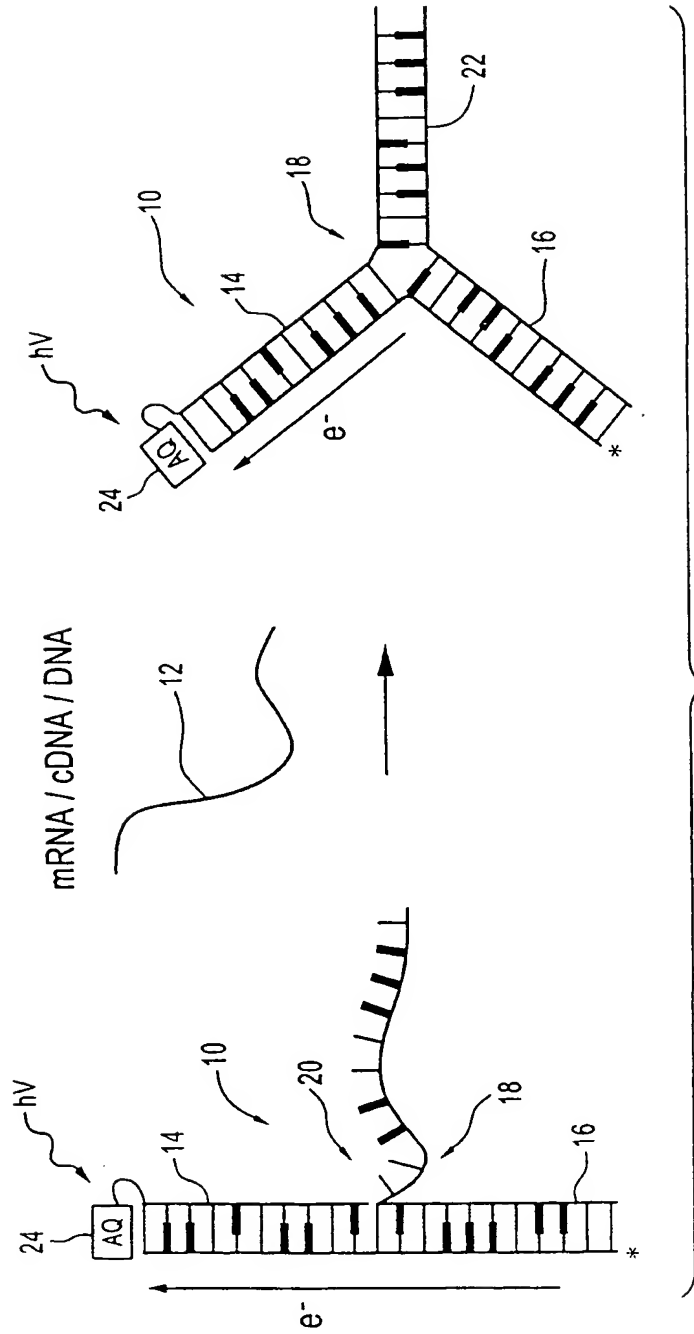


FIG. 5

A sensor for detecting specific DNA or RNA oligonucleotides

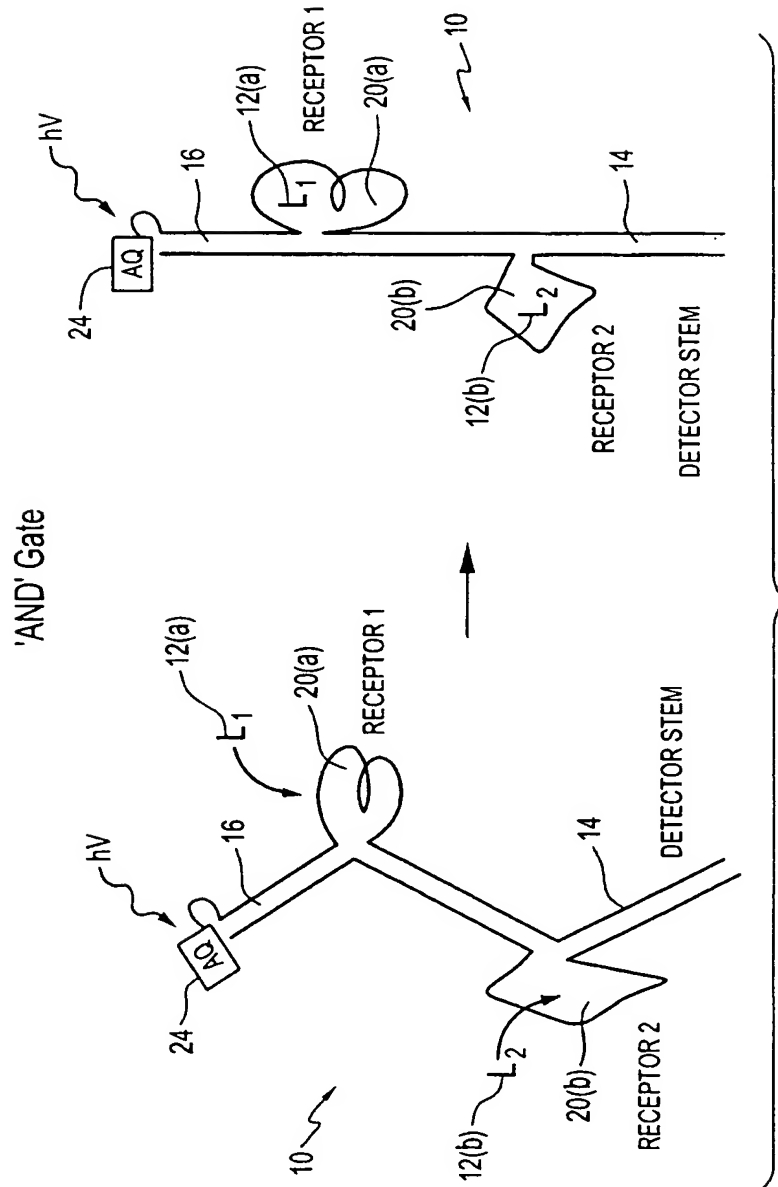
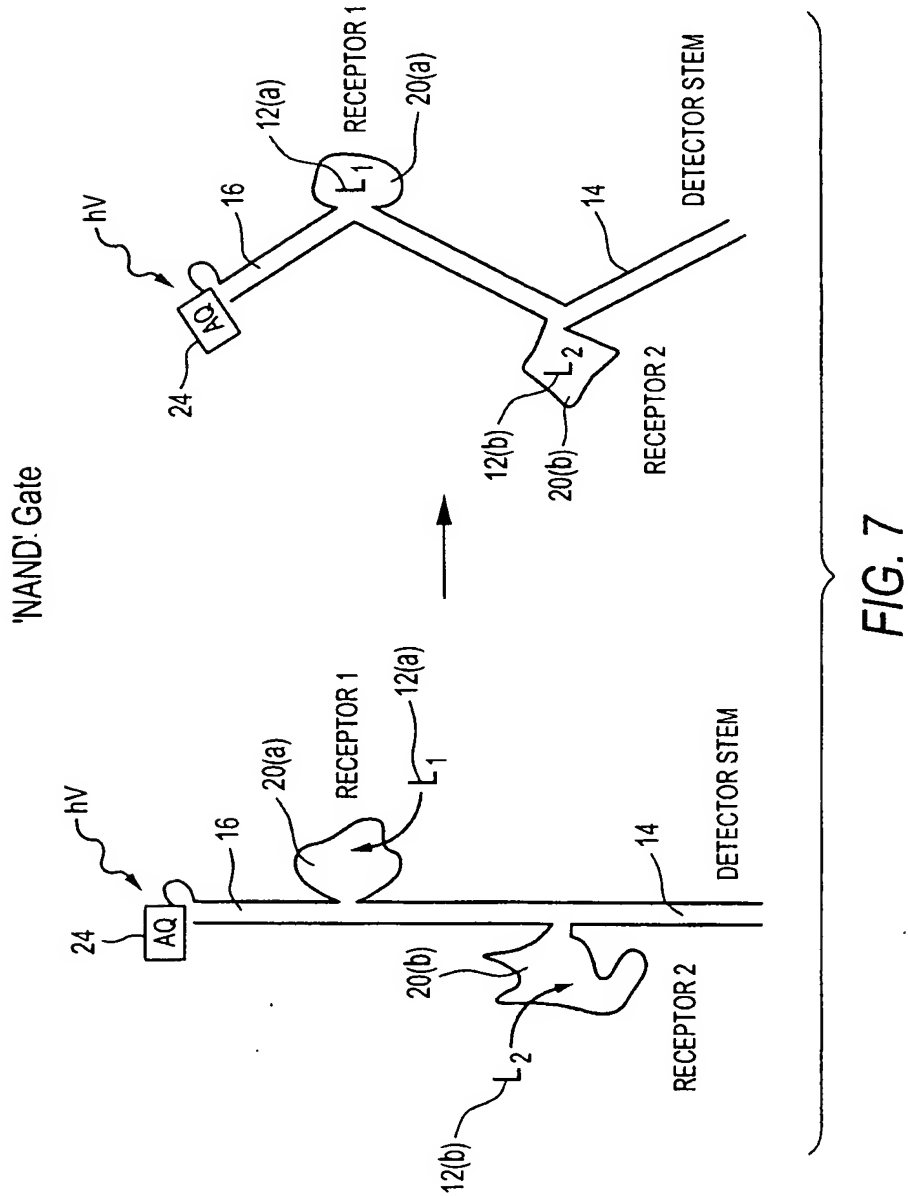


FIG. 6



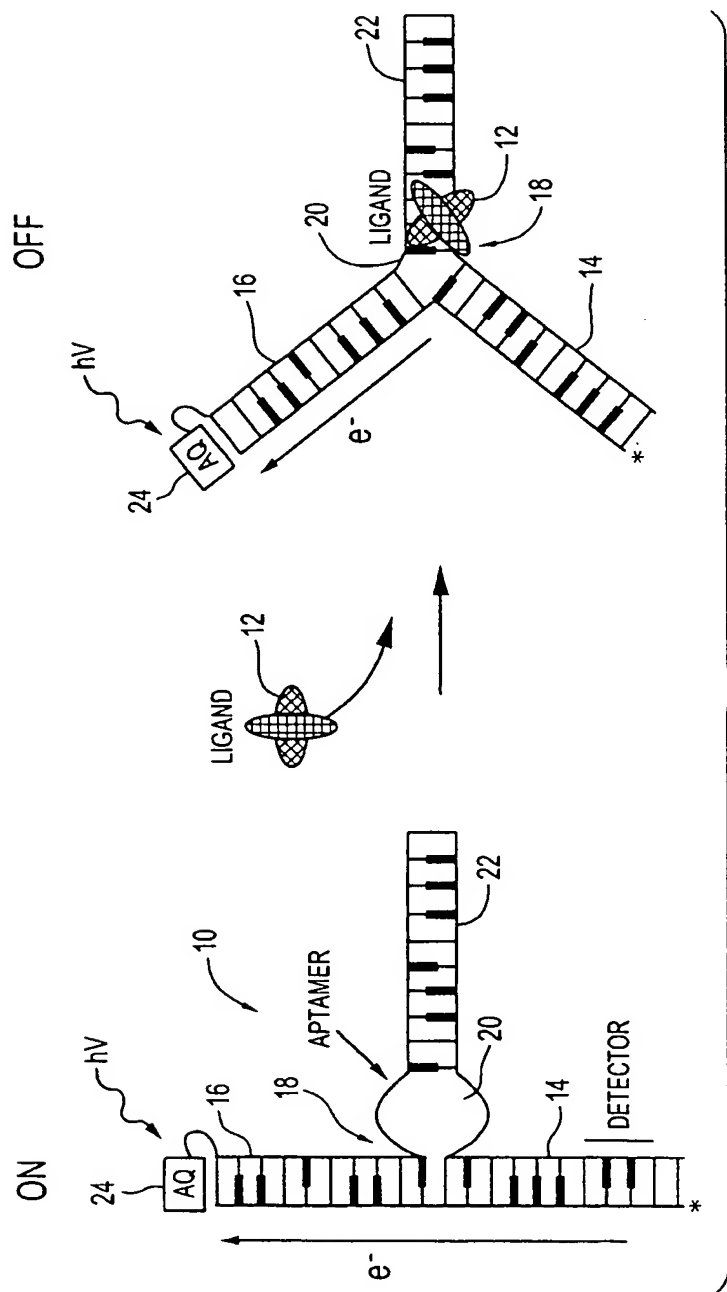


FIG. 8

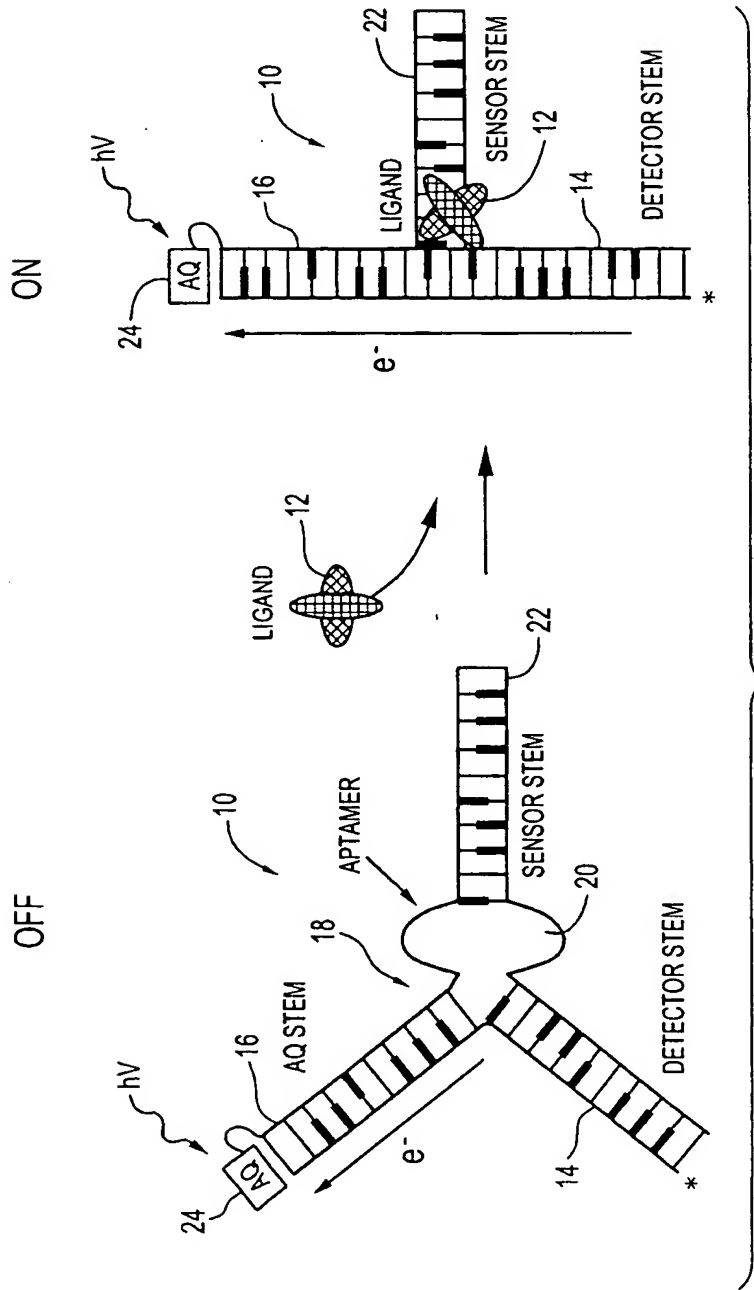


FIG. 9

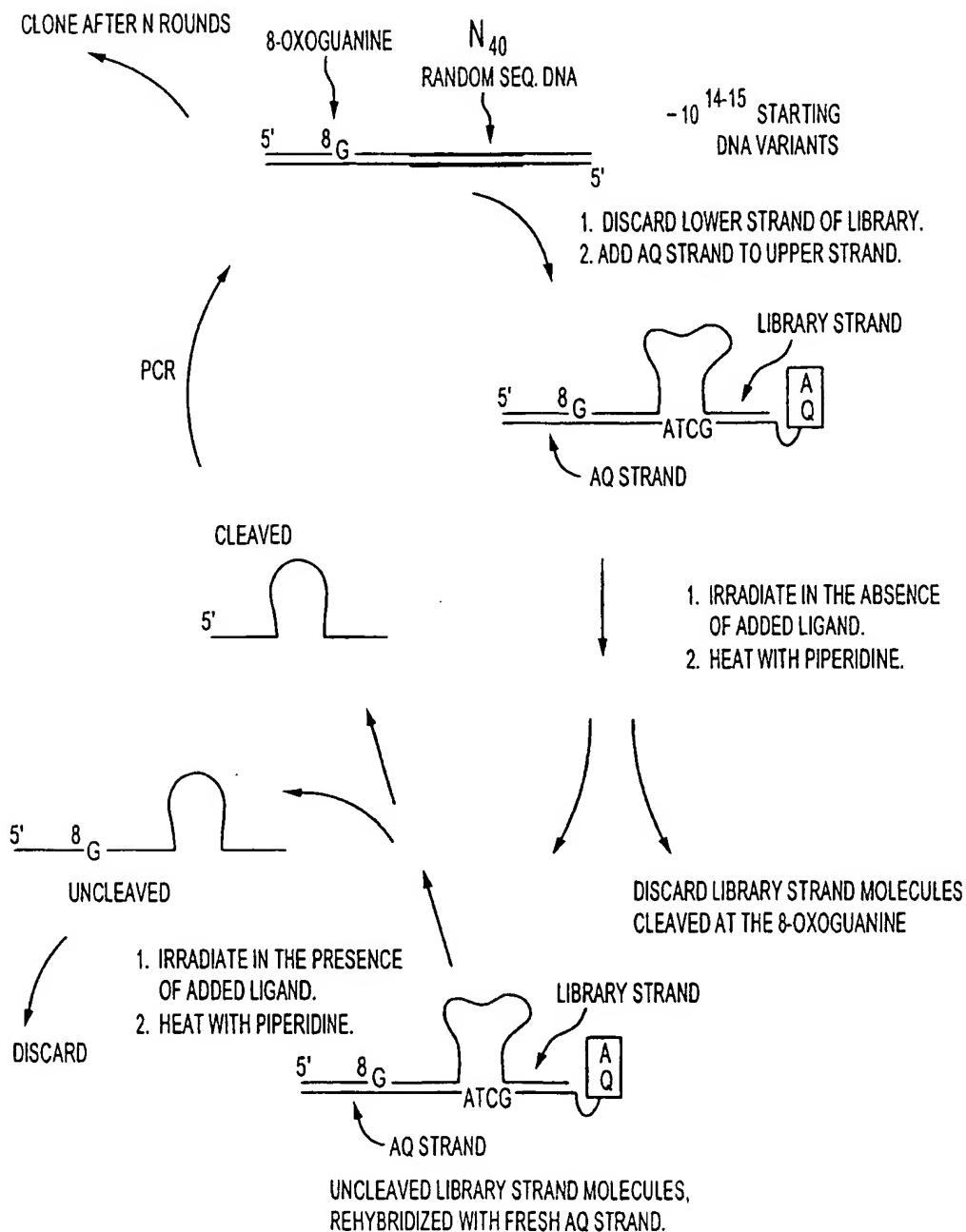
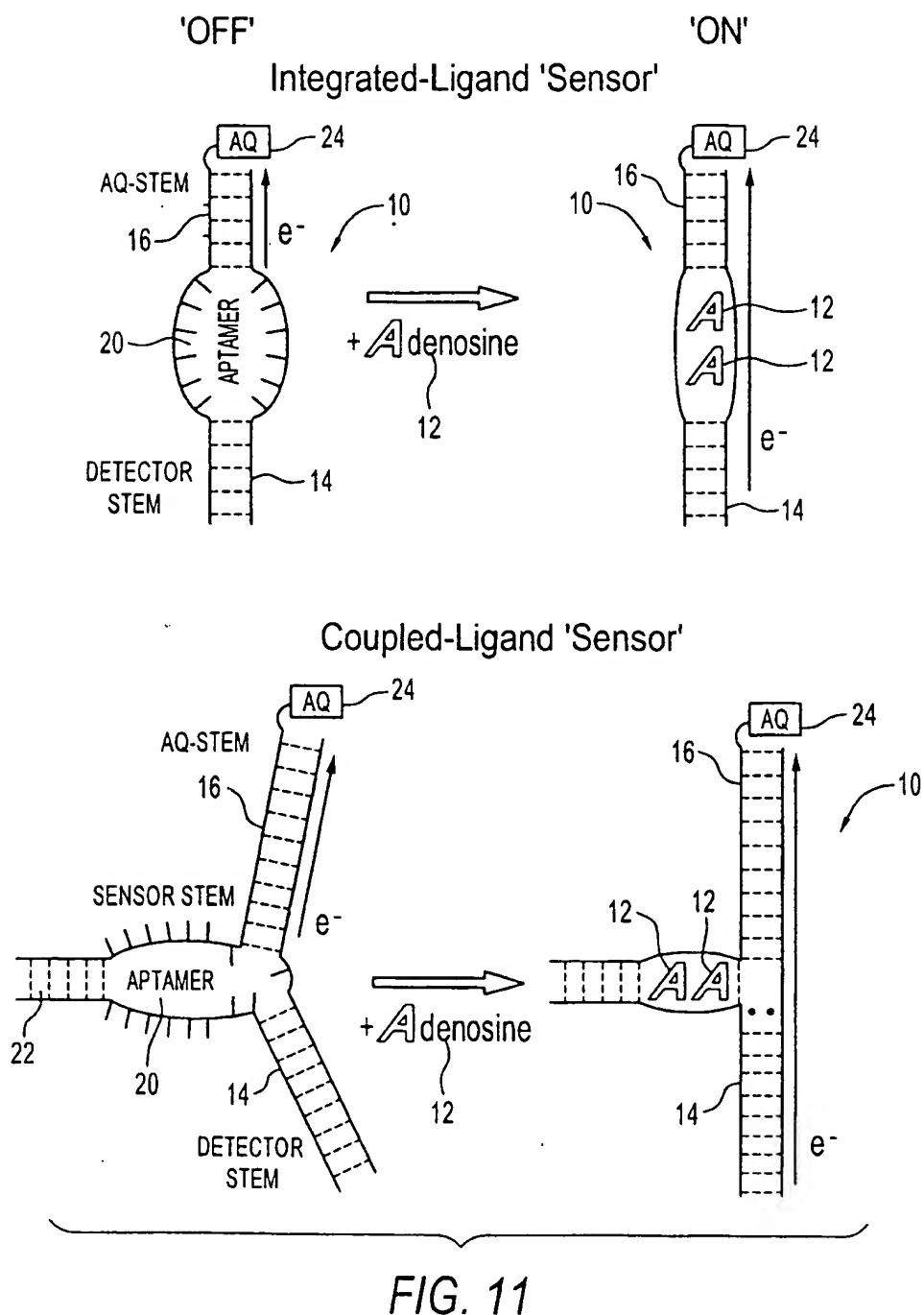


FIG. 10



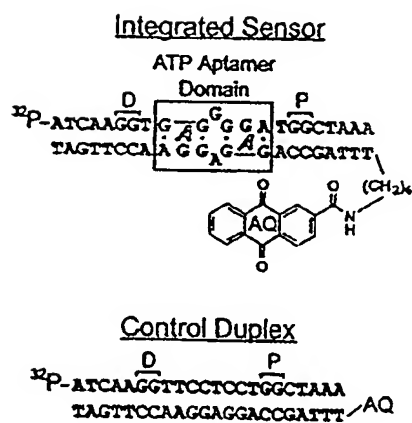


FIG. 12

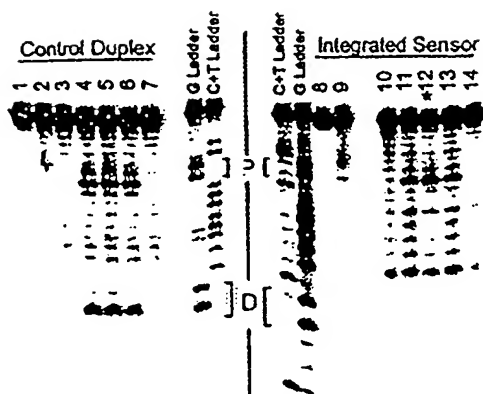


FIG. 13(a)

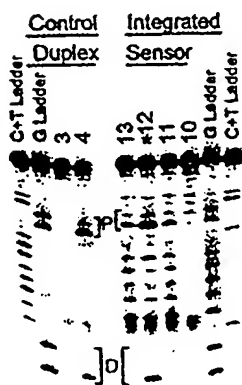


FIG. 13(b)

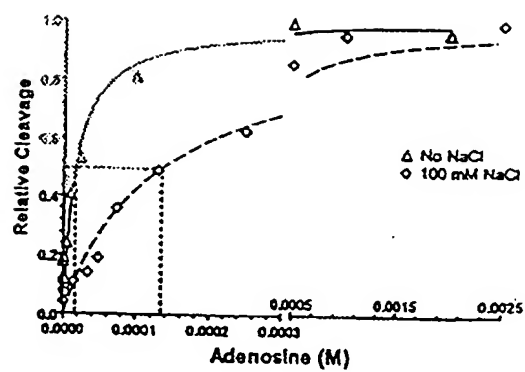


FIG. 14

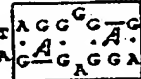


FIG. 15(a)

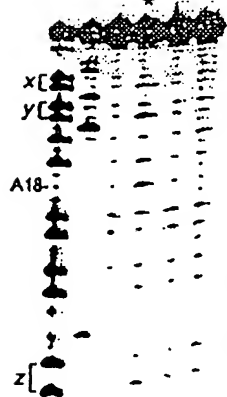


FIG. 15(b)